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Allergic Contact Stomatitis Caused by Polyester Masks: A Rare and Challenging Diagnosis

Estomatitis Alérgica de Contacto Causada por Mascarillas de Poliéster: Un Diagnóstico Raro y Desafiante

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MORAIS, H. G. F.; MEDEIROS M. R. S.; DE FREITAS SOUSA, I.; DA COSTA MIGUEL, M.C.; CAVALCANTI GALVÃO, H. & DANTAS DA SILVEIRA, E. J. Allergic contact stomatitis caused by polyester masks: A rare and challenging diagnosis. *Int. J. Odontostomat., 18(4)*:402-405, 2024.

ABSTRACT: Allergic contact stomatitis (ACS) is an inflammatory reaction of the oral mucosa resulting from contact with irritants or allergens, which is rare and difficult to diagnose. Female patient, 35 years old, feoderma, sought care complaining of sores on her lips that had been burning for two years, after being affected by COVID-19. The patient reported allergies to watch straps and clothing tags. Examination of the lips at the first visit revealed diffuse erythema and areas of scaling. Lip moisturizing cream was prescribed; hematological tests were requested, with clinical hypotheses of pemphigus vulgaris, mucous membrane pemphigoid and herpes simplex infection. Hematological exams and incisional biopsy ruled out the clinical diagnoses and during follow-up consultations the patient revealed new ulcerated lesions, and corticosteroid and urea-based cream was then prescribed. Given the report of a worsening of the condition with the use of certain masks, a diagnosis of EAC was issued to polyester masks, and the patient was advised not to use this type of mask. Currently, she has no lip injuries.

KEY WORDS: hypersensitivity, lip, oral ulcers, oral medicine.

INTRODUCTION

Allergic contact stomatitis (ACS) is the result of a type IV hypersensitivity immune reaction mediated by allergen-specific T cells that are in direct contact with the oral mucosa (Feller *et al*., 2017). Its diagnosis is made based on history and clinical findings (Fonacier *et al*., 2015). Clinically, ACS manifests as lip edema, intense erythema, vesicles, erosions, ulcers, hyperkeratosis, desquamation, dryness, and crusts, accompanied by pain, burning sensation, or itchiness. Once the causative allergen is identified and removed, the clinical signs and symptoms tend to gradually disappear (Viva & Migliari, 2015). Standard treatment includes avoiding or removing the allergen. In persistent cases, the use of topical, sublesional, or systemic glucocorticosteroids may be indicated (Boyce *et al*., 2015; Cifuentes *et al*., 2017; Feller *et al*., 2017).

The clinical and histopathological characteristics of ACS are nonspecific; thus, the diagnosis is generally presumptive and can only be confirmed by resolution of the inflammation after withdrawal or removal of the suspected causative allergen (Wang & Woo, 2021). Given the diverse clinical findings and the difficulty associated with the need to identify and subsequently avoid or remove the allergen for definitive diagnosis and treatment, ACS often represents a diagnostic and therapeutic challenge (Reinhart *et al*., 2020). Within this context, we report the case of a 35-year-old woman with ACS caused by a polyester mask.

CASE REPORT

The patient attended the stomatology service complaining of burning wounds on her lips, which had appeared about 2 years earlier, shortly after she had contracted COVID-19. The patient reported previous treatment with compounded topical corticosteroids, Vaseline, and lip balm. Her medical history revealed allergy to milk protein and aplazyl. She did not report the presence of lesions in other areas of the body.

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Examination of the lips revealed diffuse erythema and areas of desquamation (Fig. 1A). However, the patient reported the emergence of more severe symptoms a week earlier and provided photos for better assessment of the case, which showed erythematous and ulcerated areas on the lower lip. Pemphigus vulgaris, mucous membrane pemphigoid, and herpes simplex infection were established as diagnostic hypotheses. The patient received a prescription of lip-moisturizing cream. In addition, the use of lip sunscreen was recommended and blood tests were requested.

The patient reported improvement in her clinical condition 15 days after the first consultation but scaly areas and dryness of the lower lip persisted (Fig. 1B). An incisional biopsy was performed, which revealed a nonspecific chronic inflammatory process. Blood tests and another incisional biopsy ruled out the initial clinical diagnoses. During the return visits, persistence of the lesions was observed (Fig. 1C) and a cream containing corticosteroid and urea was prescribed. It was on this occasion that the patient reported worsening of the condition when wearing masks. Thus, the patient was again asked about a history of allergies and also reported to be allergic to watch straps and clothing labels. Based on this, the diagnosis of ACS caused by polyester face masks was established (Fig. 1D). The patient was advised not to use this type of mask and signs and symptoms regressed after withdrawal of the mask. Currently, after 12 months of follow-up, the patient has no lip lesions.

DISCUSSION

We highlight the nonspecific clinical signs and symptoms of the present case, a peculiarity of ACS, which can be caused by a variety of substances (Lugovic-Mihic *et al*., 2018). As a consequence, ACS can mimic different lesions; in addition, it can occur in association with other conditions such as contact cheilitis, a fact that makes its understanding and diagnosis even more difficult.

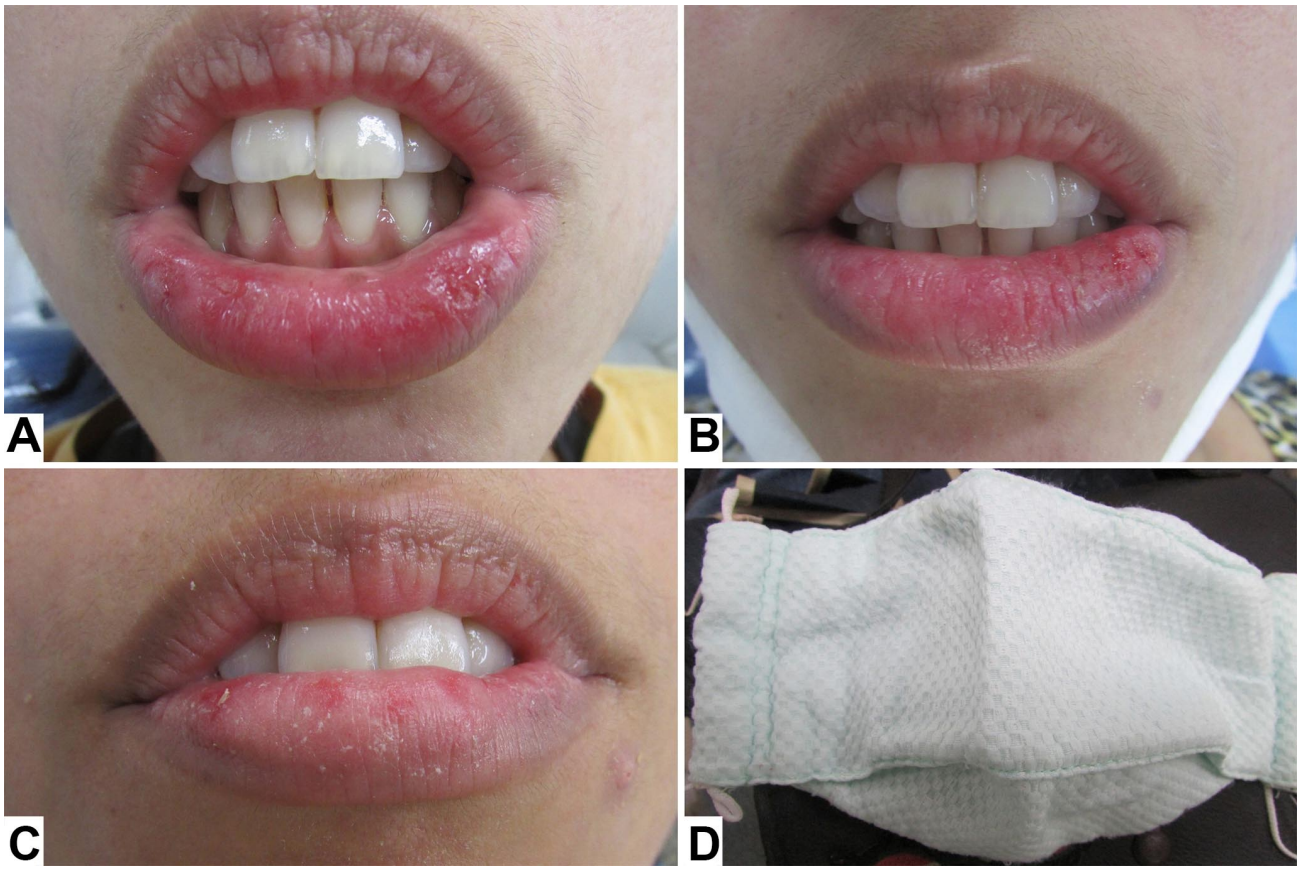

Fig. 1. Extraoral physical examination. (A) Clinical appearance of the lower lip mucosa in the first follow-up visit of the patient, showing diffuse erythema and scaly areas. (B) Clinical appearance of the lower lip post-suture removal one week after the incisional biopsy. (C) Persistence of erosive and scaly areas in week 6 of follow-up. (D) Polyester mask that the patient was wearing on the day of that visit.

Contact cheilitis is characterized by superficial inflammation of the lip usually caused by cosmetic and hygiene products, which results in dryness, desquamation, erythema, or fissures. As observed in ACS, the clinical manifestations resolve after removal of the causative agent (Minciullo *et al*., 2016; Lugovic-Mihic *et al*., 2018). Although the clinical features of the present case also resemble contact cheilitis, its cause is not related to the classical etiological factors of the latter since the patient had constantly used polyester masks during the period of the SARC-CoV-2 pandemic. A cause-effect relationship was found with the time since occurrence of the lesions, as well as with the remission of the lesions after removal of the allergen.

The main clinical manifestation of ACS is oral lichenoid reaction (OLR), a frequent hypersensitivity reaction in the cheek mucosa and lateral border of the tongue but with delayed-type hypersensitivity (Lugovic-Mihic *et al*., 2018; Reinhart *et al*., 2020). It is estimated that 60 - 80 % of patients with OLR have positive allergic contact tests. The most common cause is proximity to dental restorations, particularly those made of amalgam due to the release of mercury. However, an association with other allergens such as metals and acrylic resin is possible and removal of these irritants is recommended (Lugovic-Mihic *et al*., 2018; Reinhart *et al*., 2020). The present case also deviates from a manifestation of OLR because of its location on the lips, the type of allergen, and the immediate temporal association with occurrence of the lesions.

Despite the high prevalence of the association of ACS with contact cheilitis and OLR reported in the literature (Reinhart *et al*., 2020), the variable clinical presentation of lip lesions, as observed in the present case, suggests an association with other lesions that frequently occur at this site and that clinically resemble ulcers such as vesiculobullous disorders, which would justify the initial clinical hypotheses. It is also noteworthy that the patient had lived since childhood with episodes of contact dermatitis caused by polyester present in her clothes but only manifested the reaction on her lip because of the use of a protective mask during the COVID-19 pandemic.

CONCLUSIONS

We highlight the complexity of the diagnosis of ACS due to the paucity of discussion on this topic; however, thorough clinical examination increases the chances of diagnostic elucidation. Although the patient did not undergo patch tests due to financial reasons, it was possible to confirm the diagnosis by removal of the causal agent, which led to remission of the clinical presentation and confirmation of the cause-effect relationship. In conclusion, ACS has a variable clinical appearance, which can sometimes be a source of confusion by resembling other lesions; thus, the diagnosis must be based on the correlation of the oral and systemic medical history with the signs and symptoms of the patient.

Patient consent statement. The authors certify that they have obtained all appropriate consent forms from patients. On the form, the patient(s) gave their consent for their images and other clinical information to be reported in the report. Patients understand that their names and initials will not be published and reasonable efforts will be made to conceal their identity.

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RESUMEN: La estomatitis por contacto alérgico (ECA) es una reacción inflamatoria de la mucosa oral resultante del contacto con irritantes o alérgenos, que es rara y difícil de diagnosticar. Una paciente, mujer de 35 años de edad, feodérmica, buscó atención quejándose de úlceras con ardor en los labios durante dos años, después de verse afectada por COVID-19. La paciente además informó de alergias a las correas de reloj y etiquetas de ropa. El examen de los labios durante la primera visita reveló eritema difuso y áreas de descamación. Se prescribió una crema hidratante para labios y se solicitaron pruebas hematológicas, con hipótesis clínicas de pénfigo vulgar, pénfigo de membranas mucosas e infección por herpes simplex. Los exámenes hematológicos y la biopsia incisional descartaron los diagnósticos clínicos y durante las consultas de seguimiento la paciente reveló nuevas lesiones ulceradas, por lo que se prescribió crema a base de corticosteroides y urea. Dado el informe de un empeoramiento de la condición con el uso de ciertas mascarillas, se emitió un diagnóstico de ECA para las mascarillas de poliéster, y se aconsejó a la paciente que no usara este tipo de mascarilla. Actualmente, la paciente no presenta lesiones en los labios.

PALABRAS CLAVE: hipersensibilidad, labio, úlceras orales, medicina oral.

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